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(74) Agent: **HARTNACK, Wolfgang**; Deutsche Thom-
son-Brandt GmbH, European Patent Operations,
Karl-Wiechert-Allee 74, 30625 Hannover (DE).

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(71) Applicant (*for all designated States except US*): **THOM-
SON LICENSING S.A.** [FR/FR]; 46 Quai A. le Gallo,
92100 Boulogne-Billancourt (FR).

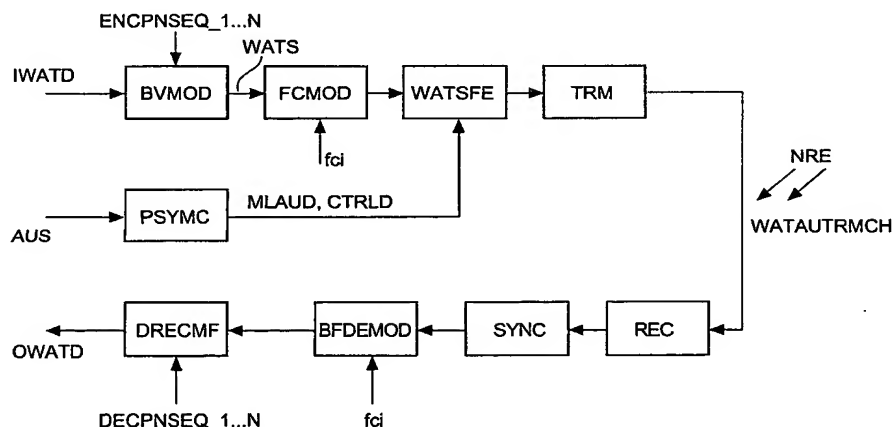
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BAUM, Peter**,
Georg [DE/DE]; Am Gutspark 32, 30539 Hannover (DE).
VOESSING, Walter [DE/DE]; Remarqueweg 23, 30455
Hannover (DE).

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(54) Title: METHOD AND APPARATUS FOR TRANSMITTING WATERMARK DATA BITS USING A SPREAD SPECTRUM,
AND FOR REGAINING WATERMARK DATA BITS EMBEDDED IN A SPREAD SPECTRUM



(57) Abstract: Spread spectrum technology and the related inserted or added information signal can be used for implementing wa-
termarking digital audio signals. A known processing for retrieving at receiver or decoder side the watermark signal information bit
from the spread spectrum is convolving the received or replayed spectrum with a spreading function that is time-inverse with respect
to the original spreading function. The pseudo noise sequences are modulated one or more carrier frequencies which are inserted
at one or more frequency bands into the spectrum of an audio signal. The watermark signal decoder checks the frequency bands
occupied by such carriers. According to the invention, the frequency band oc-cupation information is signalled in advance, i.e. is
trans-mitted already together with the frame data for the current frame, such that the watermark signal decoder knows before pro-
cessing the following audio signal frame which carrier frequency or frequencies are occupied and must be used for the corresponding
carrier demodulation, and which carrier frequencies need not be checked and demodulated.

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